

## **Claims**

What is claimed is:

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1. A signal transmission amplifier circuit, comprising:

a transmission gate having an input coupled to an input signal;

a cross coupled latch coupled to an output of the transmission gate and

10 having a signal output; and

a reference generating circuit coupled to the cross coupled latch.

2. The circuit of claim 1, further including a strobe signal coupled to the transmission gate.

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3. The circuit of claim 2, wherein the strobe signal is coupled to the cross coupled latch.

4. The circuit of claim 1, wherein the reference generating circuit

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5. The circuit of claim 4, wherein the reference generating circuit includes a latch coupled to the Schmitt trigger.

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6. The circuit of claim 5 further including a second transmission gate between the output of the latch and the cross coupled latch.

7. The circuit of claim 1, wherein the input signal is a single ended input.

8. The circuit of claim 1, wherein the input of the transmission gate is coupled to a transmission line.

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9. A signal transmission amplifier circuit, comprising:

a transmission gate having an input; and

a latch coupled to an output of the transmission gate having a reference

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input.

10. The circuit of claim 9, wherein the latch is a cross coupled latch.

11. The circuit of claim 9, wherein the transmission gate is coupled to a

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strobe signal and an inverted strobe signal.

12. The circuit of claim 10, wherein the cross coupled latch latches on an input signal having a voltage that is less than a transistor threshold.

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13. The circuit of claim 12, wherein the cross coupled latch is coupled to a strobe signal.

14. The circuit of claim 12, further including a reference circuit having a second latch generating the reference input signal.

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15. A signal transmission amplifier circuit, comprising:

a cross coupled latch having an input; and

a reference voltage generating circuit coupled to the cross coupled latch.

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16. The circuit of claim 15, wherein the cross coupled latch has a strobe signal input.

17. The circuit of claim 15, further including a transmission gate coupled between the input of the cross coupled latch and an input signal.

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18. The circuit of claim 15, further including a transmission gate between the reference voltage generating circuit and the cross coupled latch.

19. The circuit of claim 18, wherein the reference generating circuit includes a latch.

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20. The circuit of claim 19, wherein an input signal is a single ended signal.

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